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(21) International Application Number: PCT/IT99/00063 (22) International Filing Date: 18 March 1999 (18.03.99) (30) Priority Data: RM98A000172 18 March 1998 (18.03.98) IT (71) Applicants (for all designated States except US): CONSIGLIO NAZIONALE DELLE RICERCHE [IT/IT]; Piazzale Aldo Moro, 7, I-00185 Roma (IT). YISSUM RESEARCH DEVELOPMENT COMPANY OF THE HEBREW UNIVERSITY OF JERUSALEM [IL/IL]; P.O. Box 4279, 91042 Jerusalem (IL). (72) Inventors; and (75) Inventors/Applicants (for US only): PAGLIARO, Mario [IT/IT]; Viale del Fante, 50, I-90146 Palermo (IT). AVNIR, David [IL/IL]; Novomiesky Street 2, 96908 Jerusalem (IL). DEGANELLO, Giulio [IT/IT]; Via Messina, 3, I-90141 Palermo (IT). BLUM, Jochanan [IL/IL]; Hameshoreret Rachel Street 13, 96348 Jerusalem (IL). (74) Agents: BAZZICHELLI, Alfredo et al.; Società Italiana Brevetti S.p.A., Piazza di Pietra, 39, I-00186 Roma (IT).			(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: CATALYTIC MATERIALS FOR SELECTIVE OXIDATION OF ALCOHOLS, PROCESS FOR PRODUCTION THEREOF AND THEIR USE IN ALCOHOL OXIDATION PROCESS			
(57) Abstract <p>A versatile methodology to obtain efficient catalytic materials suitable for selective, liquid-phase oxidations of alcohols is described. Solid inorganic membranes were prepared by the sol-gel procedure by adding a solution of stable organic nitroxyl radicals at the onset of the polymerization of silicon alkoxide monomers. In this way, micro- and mesoporous materials can be obtained that are effective and recyclable catalytic mediators for highly selective oxidations of a vast class of primary and secondary alcohols carried out with several primary oxidants. Delicate substrates such as carbohydrates and allylic alcohols can selectively be oxidised with these novel catalytic materials.</p>			

ABSTRACT OF THE DISCLOSURE

A versatile methodology to obtain efficient catalytic materials suitable for selective, liquid-phase oxidations of alcohols is described. Solid inorganic membranes were prepared by the sol-gel procedure by adding a solution of stable organic nitroxyl radicals at the onset of the polymerization of silicon alkoxide monomers. In this way, micro- and mesoporous materials can be obtained that are effective and recyclable catalytic mediators for highly selective oxidations of a vast class of primary and secondary alcohols carried out with several primary oxidants. Delicate substrates such as carbohydrates and allylic alcohols can selectively be oxidized with these novel catalytic materials.